To the Claims

Claims 1-47 (cancelled)

48. (Currently amended) A method of diagnosing breast cancer in a human patient, the method comprising:

(i) obtaining a sample comprising breast tissue from a human patient; and

(ii) detecting the level of a polynucleotide encoding a BCH1 polypeptide in the sample, wherein the polynucleotide is an ~~m~~RNA equivalent of ~~at least 95% identical to~~ the nucleic acid sequence disclosed in SEQ ID NO: 23, and wherein an increase in the level of the polynucleotide relative to normal breast tissue is indicative of cancer.

49. (Cancelled)

50. (Cancelled)

51. (Cancelled)

52. (Previously presented) The method of claim 48, wherein the method further comprises isolating nucleic acids from the sample.

53. (Cancelled)

54. (Cancelled)

55. (Previously presented) The method of claim 48, wherein the detecting step comprises hybridizing a labeled probe to the polynucleotide.

56. (Previously presented) The method of claim 55, wherein the probe is labeled with a fluorescent label.

57. (Previously presented) The method of claim 48, wherein the detecting step comprises hybridizing the polynucleotide to a probe that is immobilized on a solid surface.

58. (Previously presented) The method of claim 48, wherein the detecting step comprises contacting the sample with a biochip, wherein the biochip comprises the nucleic acid sequence disclosed in SEQ ID NO: 23.

59. (New) A method of diagnosing breast cancer in a human patient, the method comprising:

(i) detecting the level of a polynucleotide encoding a BCH1 polypeptide in the human patient, wherein the polynucleotide is an RNA equivalent of the nucleic acid sequence disclosed in SEQ ID NO: 23, and wherein an increase in the level of the polynucleotide relative to a normal human tissue is indicative of cancer.

60. (New) The method of claim 59, wherein the level is detected in blood from the patient.

61. (New) The method of claim 59, wherein the method further comprises isolating nucleic acids from the patient.

62. (New) The method of claim 59, wherein the detecting step comprises hybridizing a labeled probe to the polynucleotide.

63. (New) The method of claim 59, wherein the probe is labeled with a fluorescent label.

64. (New) The method of claim 59, wherein the detecting step comprises hybridizing the polynucleotide to a probe that is immobilized on a solid surface.

65. (New) The method of claim 59, wherein the detecting step comprises contacting nucleic acids from the patient with a biochip, wherein the biochip comprises the nucleic acid sequence disclosed in SEQ ID NO: 23.

66. (New) A method of monitoring breast cancer in a human patient, the method comprising:

(i) measuring the level of expression of an expression product of a gene encoding an amino acid sequence of SEQ ID NO:25 in said human patient;

(ii) comparing the level of said expression product in said human with the level of expression of said expression product in a normal human.

67. (New) The method of claim 66, wherein the level is detected in blood from the patient.

68. (New) The method of claim 66, wherein the expression product is detected with an antibody.

69. (New) The method of claim 66, wherein the method further comprises isolating a protein from the patient.